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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/567,117

07/31/2007

Kouichi Fujiwara

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30671 7590 12/30/2008  
DITTHAVONG MORI & STEINER, P.C.  
918 Prince St.  
Alexandria, VA 22314

EXAMINER

CHU, JOHN S Y

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

12/30/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/567,117	<b>Applicant(s)</b> FUJIWARA ET AL.	
	<b>Examiner</b> JOHN S. CHU	<b>Art Unit</b> 1795	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 February 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/3/06, 4/25/07</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

This Office action is in response to the application filed February 3, 2006.

### *Claim Rejections - 35 USC § 103*

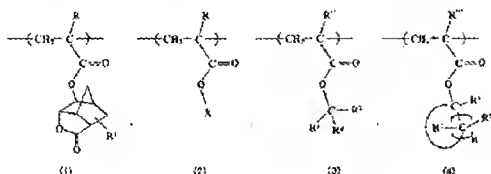
1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over MOMOTA et al (2004/0202954) and WATANABE et al.

The claimed invention is drawn to the following:

1. An acrylic polymer comprising a recurring unit (i) represented by the following formula (1), a recurring unit (ii) represented by the following formula (2), and an acid-labile group-containing recurring unit (iii) which contains at least one unit selected from a recurring unit represented by the following formula (3) and formula (4).



wherein, in the formulas (1) to (4), R, R', R'', and R''' individually represent a hydrogen atom, methyl group, or trifluoromethyl group, in the formula (1), R<sup>1</sup> represents a hydrogen atom, linear or branched alkyl group having 1-4 carbon atoms, linear or branched alkoxy group having 1-4 carbon atoms, or linear or branched fluoroalkyl group having 1-4 carbon atoms, in the formula (2), X represents a polycyclic hydrocarbon group consisting only of carbon and hydrogen and having 7-20 carbon atoms, in the formula (3), R<sup>2</sup> and R<sup>3</sup> individually represent a linear or branched alkyl group having 1-4 carbon atoms and R<sup>4</sup> represents an alicyclic hydrocarbon group having 4-20 carbon atoms, and in the formula (4), R<sup>5</sup> represents a linear or branched alkyl group having 1-4 carbon atoms, R<sup>6</sup> and R<sup>7</sup> individually represent a hydrogen atom or a linear or branched alkyl group having 1-4 carbon atoms, and n represents an integer

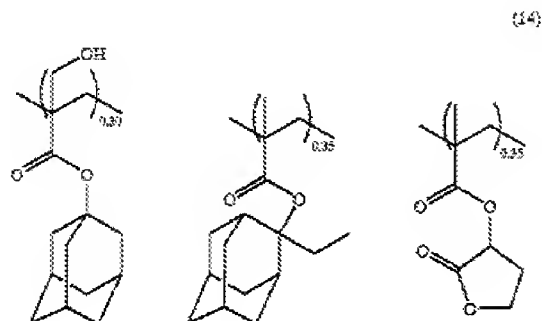
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WATANABE et al (2004/0176630) discloses a terpolymer as follows on page 7,

## Reference Example 1

Synthesis of a Polymer using Inventive  
 $\alpha$ -(oxymethyl)acrylic Acid Ester

[0060]

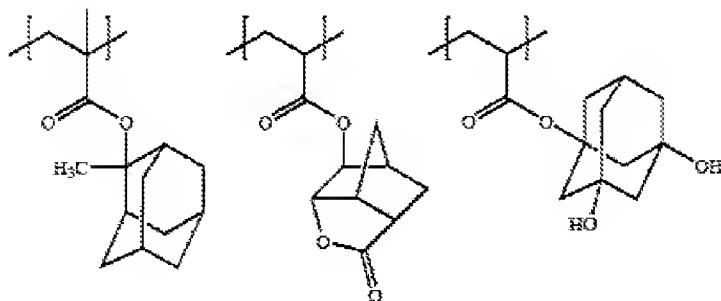


paragraph [0060]:

This copolymer meets the claimed acrylic resin lacking only the bicycloheptane carbolactone comonomer.

MOMOTA et al disclose a resin for photoresist compositions which recite a bicycloheptane carbolactone, a methyl adamantyl acrylate and a dihydroxy adamantyl acrylate terpolymer, see page 51 resin RB-1 also attached here:

RB-1



This reference further includes that butyrolactone and the bicycloheptane carbolactone are functionally equivalent as seen in page 8 paragraph [0073].

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It would have been prima facie obvious to one of ordinary skill in the art of Photoresist compositions and acrylic resins to substitute a known equivalent of butyrolactone being a bicycloheptane carbolactone and reasonably expect same or similar results as disclosed in WATANABE et al for improved transparency and dry etch resistance as well as expect good adhesion of the polymer to the substrate as expected from lactone monomers.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chu whose telephone number is (571) 272-1329. The examiner can normally be reached on Monday - Friday from 9:30 am to 6:00 pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Cynthia Kelly, can be reached on (571) 272-1526

The fax phone number for the USPTO is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PMR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/John S. Chu/  
Primary Examiner, Art Unit 1795

J.Chu  
December 22, 2008